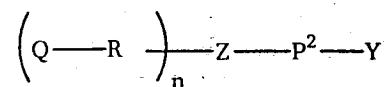


ABSTRACT OF THE DISCLOSURE

A multi-functional polymer defined by the formula



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where $(Q-R)_n$ is a functionality cluster, Q is a functional group, R is a multi-valent organic group, P^2 is a long-chain polymer, n is an integer from about 2 to about 10, Y is a proton, a weak functional group, or a selective functional group, and Z is a branch point where the functionality clusters join the long-chain polymer.

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